

REACTOR

Abstract of the Disclosure

A thermally diluted exothermic reactor system is comprised of numerous orifices distributed within a combustor by distributed perforated contactor tubes or ducts. The perforated contactors deliver and mix diluent fluid and one or more reactant fluids with an oxidant fluid. Numerous micro-jets about the perforated tubes deliver, mix and control the composition of reactant fluid, oxidant fluid and diluent fluid. The reactor controls one or more of composition profiles, composition ratio profiles and temperature profiles in one or more of the axial direction and one or two transverse directions, reduces temperature gradients and improves power, efficiency and emissions.

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